



Atty. Dkt. No. 027053-0109

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Angela M. BELCHER et al.
Title: Fabricated Biofilm Storage Device
Appl. No.: 10/668,600
Filing Date: 9/24/2003
Examiner: Unassigned
Art Unit: 1744

INFORMATION DISCLOSURE STATEMENT
UNDER 37 CFR §1.56

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Submitted herewith on Form PTO/SB/08 is a listing of documents known to Applicants in order to comply with Applicants' duty of disclosure pursuant to 37 CFR §1.56.

A copy of each non-patent document is being submitted to comply with the provisions of 37 CFR §1.97 and §1.98.

The submission of any document herewith, which is not a statutory bar, is not intended as an admission that such document constitutes prior art against the claims of the present application or that such document is considered material to patentability as defined in 37 CFR §1.56(b). Applicants do not waive any rights to take any action which would be appropriate to antedate or otherwise remove as a competent reference any document which is determined to be a *prima facie* art reference against the claims of the present application.

TIMING OF THE DISCLOSURE

The listed documents are being submitted in compliance with 37 CFR §1.97(b), before the mailing date of the first Office Action on the merits.

RELEVANCE OF EACH DOCUMENT

The relevance of the foreign-language document (B46) is not described in the present specification. An English translation of the foreign-language document is not readily available. However, the absence of such translation does not relieve the PTO from its duty to consider the submitted foreign language document (37 CFR §1.98 and MPEP §609).

Applicants respectfully request that any listed document be considered by the Examiner and be made of record in the present application and that an initialed copy of Form PTO/SB/08 be returned in accordance with MPEP §609.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 CFR §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741.

Respectfully submitted,

Date

January 28, 2005

FOLEY & LARDNER LLP

Customer Number: 22428

Telephone: (202) 672-5569

Facsimile: (202) 672-5399

By

J. Steven Rutt

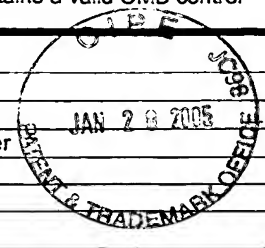
J. Steven Rutt

Attorney for Applicant

Registration No. 40,153

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449B/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT Date Submitted: _____ (use as many sheets as necessary)		Complete if Known <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Application Number</td> <td>10/668,600</td> </tr> <tr> <td>Filing Date</td> <td>9/24/2003</td> </tr> <tr> <td>First Named Inventor</td> <td>Angela M. Belcher</td> </tr> <tr> <td>Group Art Unit</td> <td>1744</td> </tr> <tr> <td>Examiner Name</td> <td>Unassigned</td> </tr> <tr> <td>Attorney Docket Number</td> <td>027053-0109</td> </tr> </table>		Application Number	10/668,600	Filing Date	9/24/2003	First Named Inventor	Angela M. Belcher	Group Art Unit	1744	Examiner Name	Unassigned	Attorney Docket Number	027053-0109
Application Number	10/668,600														
Filing Date	9/24/2003														
First Named Inventor	Angela M. Belcher														
Group Art Unit	1744														
Examiner Name	Unassigned														
Attorney Docket Number	027053-0109														
Sheet	1	of	4												



U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code ² (if known)			
	B1	2003-0073104	A1	BELCHER et al.	4/17/2003	
	B2	2003/0068900		BELCHER et al.	04/10/2003	
	B3	2003/0113714		BELCHER et al.	06/19/2003	
	B4	2003/0148380		BELCHER et al.	08/07/2003	
	B5	2004/0171139		BELCHER et al.	09/02/2004	

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Foreign Patent Document			Name of Patentee or Applicant of Cited Documents	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶
		Office ³	Number ⁴	Kind Code ⁵ (if known)				
	B6	WO	2003/078451	A2	NAIK et al.	9/25/2003		

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.) date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ⁶
	B7	ADAMS et al., "Entropically driven microphase transitions in mixtures of colloidal rods and spheres," NATURE, May 28, 1998, Vol. 393, pp. 349-352.	
	B8	BAUS et al., "Phase Transitions in Colloidal Suspensions of Virus Particles," OBSERVATION, PREDICTION AND SIMULATION OF PHASE TRANSITIONS IN COMPLEX FLUIDS, 1995, pp. 113-164.	
	B9	BOAL et al., "Self-assembly of nanoparticles into structured spherical and network aggregates," NATURE, April 13, 2000, Vol. 404, pp. 746-748.	
	B10	BOOY et al., "Cryo-electron microscopy reveals macromolecular organization within biological liquid crystals seen in the polarizing microscope," INT. J. BIOL. MACROMOL., December 1985, Vol. 7, pp. 327-335.	
	B11	BROTT et al., "Ultrafast holographic nanopatterning of biocatalytically formed silica," NATURE, September 20, 2001, Vol. 413, pp. 291-293.	
	B12	CHA et al., "Silicatein filaments and subunits from a marine sponge direct the polymerization of silica and silicones <i>in vitro</i> ," PROC. NATL. ACAD. SCI. USA, January 1999, Vol. 96, pp. 361-365.	
	B13	CHEN et al., "Self-assembled smectic phases in rod-coil block copolymers," SCIENCE, July 19, 1996, Vol. 273, pp. 343-346.	

Examiner Signature	Date Considered
--------------------	-----------------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

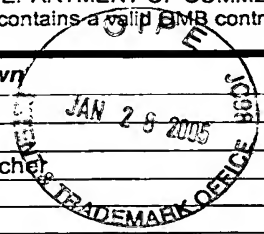
¹ Unique citation designation number. ² See attached Kinds of U.S. Patent Documents. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document.

⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449B/PTO		Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT		Application Number	10/668,600
		Filing Date	9/24/2003
Date Submitted: _____		First Named Inventor	Angela M. Belcher
		Group Art Unit	1744
(use as many sheets as necessary)		Examiner Name	Unassigned
		Attorney Docket Number	027053-0109
Sheet	2	of	4

**NON PATENT LITERATURE DOCUMENTS**

Examiner Initials*	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.) date, page(s), volume-issue number(s), publisher, city and/or country where published.	T 6
	B14	CLARK et al., "Smectic-C 'chevron,' a planar liquid-crystal defect: Implications for the surface-stabilized ferroelectric liquid-crystal geometry," PHYSICAL REVIEW A, February 1, 1998, Vol. 37, No. 3, pp. 1053-1056.	
	B15	DAS et al., "Liquid crystal polymorphism in F-actin: Optical microscopic and rotatory dispersion studies," JOURNAL OF CHEMICAL PHYSICS, November 1, 1999, Vol. 111, No. 17, pp. 8240-8250.	
	B16	DEVLIN et al., "Random peptide libraries: A source of specific protein binding molecules," SCIENCE, 1990, Vol. 249, pp. 404-406.	
	B17	DOGIC et al., "Smectic phase in a colloidal suspension of semiflexible virus particles," PHYSICAL REVIEW LETTERS, March 24, 1997, Vol. 78, No. 12, pp. 2417-2420.	
	B18	DOGIC et al., "Development of model colloidal liquid crystals and the kinetics of the isotropic-smectic transition," PHIL. TRANS. R. SOC. LOND. A, 2001, Vol. 359, pp. 997-1015.	
	B19	DOGIC et al., "Cholesteric phase in virus suspensions," LANGMUIR, 2000, Vol. 16, pp. 7820-7824.	
	B20	DOUGLAS et al., "Host-guest encapsulation of materials by assembled virus protein cages," NATURE, May 14, 1998, Vol. 393, pp. 152-155.	
	B21	FOWLER et al., "Tobacco mosaic virus liquid crystals as templates for the interior design of silica mesophases and nanoparticles," ADVANCED MATERIALS, August 16, 2001, Vol. 13, No. 16, pp. 1266-1269.	
	B22	FUKUDA et al., "Antiferroelectric chiral smectic liquid crystals," J. MATER. CHEM., 1994, Vol. 4, No. 7, pp. 997-1016.	
	B23	GLOGAROVA et al., "The influence of an external electric field on the structure of chiral SM C* liquid crystal," MOL. CRYST. LIQ. CRYST., 1983, Vol. 91, pp. 309-325.	
	B24	GOODBY et al., "A new molecular ordering in helical liquid crystals," J. AM. CHEM. SOC., 1989, Vol. 111, pp. 8119-8125.	
	B25	HARTGERINK et al., "Self-assembly and mineralization of peptide-amphiphile nanofibers," SCIENCE, November 23, 2001, Vol. 294, pp. 1684-1688.	
	B26	HE et al., "A trist grain boundary-like twisted smectic phase in monodisperse poly(γ -benzyl- α -L-glutamate) produced by recombinant DNA techniques," MACROMOLECULES, 1998, Vol. 31, pp. 9387-9389.	
	B27	HUANG et al., "Directed assembly of one-dimensional nanostructures into functional networks," SCIENCE, January 26, 2001, Vol. 291, pp. 630-633.	
	B28	KAMIEN et al., "Chiral lyotropic liquid crystals: TGB phases and helicoidal structures," J. PHYS. II FRANCE, 1997, Vol. 7, pp. 157-163.	

Examiner
SignatureDate
Considered

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² See attached Kinds of U.S. Patent Documents. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document.

⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449B/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				Application Number	10/668,600
				Filing Date	9/24/2003
				First Named Inventor	Angela M. Belcher
				Group Art Unit	1744
				Examiner Name	Unassigned
Date Submitted: _____				Attorney Docket Number	027053-0109
(use as many sheets as necessary)					
Sheet	3	of	4		

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.) date, page(s), volume-issue number(s), publisher, city and/or country where published.	T 6
	B29	LEE et al., "Chiral smectic C structures of virus-based films," LANGMUIR, 2003, Vol. 19, pp. 1592-1598.	
	B30	LEE et al., "Virus-based alignment of inorganic, organic, and biological nanosized materials," ADVANCED MATERIALS, May 2, 2003, Vol. 15, No. 9, pp. 689-692.	
	B31	LI et al., "Semiconductor nanorod liquid crystals," NANO LETTERS, June 2002, Vol. 2, No. 6, pp. 557-560.	
	B32	MAEDA, Hideatsu, "Atomic force microscopy studies for investigating the smectic structures of colloidal crystals of β -FeOOH," LANGMUIR, 1996, Vol. 12, pp. 1446-1452.	
	B33	MAEDA et al., "Schiller layers in β -ferric oxyhydroxide sol as an order-disorder phase separating system," COLLOIDS AND SURFACES, 1983, Vol. 1, pp. 1-16.	
	B34	MATHIAS et al., "Self-assembly through hydrogen bonding: Peripheral crowding—A new strategy for the preparation of stable supramolecular aggregates based on parallel, connected CA_3M_3 rosettes," 1994, Vol. 116, pp. 4326-4340.	
	B35	MEYER et al., "Ferroelectric liquid crystals," J. PHYS. (PARIS) LETT., 1975, Vol. 36, pp. 1-69.	
	B36	MIRKIN et al., "A DNA-based method for rationally assembling nanoparticles into macroscopic materials," NATURE, Vol. 382, August 15, 1996, pp. 607-609.	
	B37	NAIK et al., "Silica-precipitating peptides isolated from a combinatorial phage display peptide library," J. NANOSCI. NANOTECH., 2002, Vol. 2, No. 1., pp. 95-100.	
	B38	NAIK et al., "Biomimetic synthesis and patterning of silver nanoparticles," NATURE MATERIALS, November 2002, Vol. 1, pp. 169-172.	
	B39	PATRICK et al., "Nanometer-scale aspects of molecular ordering in nanocrystalline domains at a solid interface: The role of liquid crystal—surface interactions studied by STM and molecule corrals," J. PHYS. CHEM. B, 1999, vol. 103, pp. 8328-8336.	
	B40	PERCEC et al., "Self-organization of supramolecular helical dendrimers into complex electronic materials," NATURE, September 26, 2002, Vol. 419, pp. 384-387.	
	B41	ROTH et al., "A minimized M13 coat protein defines the requirement for assembly into the bacteriophage particle," J. MOL. BIOL., 2002, Vol. 322, pp. 357-367.	
	B42	SONIN, A.A., FREELY SUSPENDED LIQUID CRYSTALLINE FILMS, 1988, pp. 25-43 and pp. 75-78.	

Examiner Signature	Date Considered
--------------------	-----------------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² See attached Kinds of U.S. Patent Documents. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document.

⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449B/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT Date Submitted: _____ (use as many sheets as necessary)				Application Number	10/668,600
				Filing Date	9/24/2003
				First Named Inventor	Angela M. Belcher
				Group Art Unit	1744
				Examiner Name	Unassigned
Sheet	4	of	4	Attorney Docket Number	027053-0109

NON PATENT LITERATURE DOCUMENTS				
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.) date, page(s), volume-issue number(s), publisher, city and/or country where published.	T 6	
	B43	WALBA et al., "Detecting molecular chirality by scanning tunneling microscopy," ACC. CHEM. RES., 1996, Vol. 29, pp. 591-597.		
	B44	WEBER et al., "Structural origins of high-affinity biotin binding to streptavidin," REPORTS, January 6, 1989, Vol. 243, pp. 85-88.		
	B45	WELSH et al., "Evidence for tilted smectic liquid crystalline packing of fd <i>Inovirus</i> from X-ray fiber diffraction," MACROMOLECULES, 1996, Vol. 29, pp. 7075-7083.		
	B46	WETTER, Carl, "Die Flüssigkristalle des tabak-mosaikvirus," BIOLOGIE IN UNSERER ZEIT, 1985, No. 3, pp. 81-89.		
	B47	WHALEY et al., "Selection of peptides with semiconductor binding specificity for directed nanocrystal assembly," NATURE, June 8, 2000, Vol. 405, pp. 665-668.		
	B48	WINFREE et al., "Design and self-assembly of two-dimensional DNA crystals," NATURE, August 6, 1998, Vol. 394, pp. 539-544.		
	B49	YU et al., "Smectic ordering in solutions and films of a rod-like polymer owing to monodispersity of chain length," NATURE, September 11, 1997, Vol. 389, pp. 167-170.		
	B50	ZHENG et al., "Mesogen orientation within smectic C* side chain liquid crystalline diblock copolymers," MACROMOLECULES, 1998, Vol. 31, pp. 2686-2689.		

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² See attached Kinds of U.S. Patent Documents. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document.

⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.